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ABSTRACT

The National Institute for Occupational Safety and Health has ranked 130 jobs in terms of the level of stress they engender. According to this ranking, clerical and service workers are in occupations which engender very high levels of stress. This study examined the relative contribution of a variety of occupational and nonoccupational sources of stress to the psychological and physical health of service and clerical workers. Scales of job stress, life stress, and outcome measures of job satisfaction, self-esteem, depressed mood, psychological disturbance, and physical illness were administered to 150 clerical and 61 service workers. Results indicated occupational differences in patterns of stress, in patterns of strain reactions, and in the prediction of specific negative consequences from particular stressors. Clerical workers appeared more sensitive to task insignificance and work environment discomfort while service workers were more affected by lack of autonomy and role overload. For both groups, physical illness was a consequence of life rather than work stress. (Author/NB)

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JOB AND LIFE STRESS AND STRAIN OUTCOMES AMONG SERVICE AND CLERICAL WORKERS.[1]

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ABSTRACT

Scales of job stress, life stress, and outcome measures of job satisfaction, self esteem, depressed mood, psychological disturbance, and physical illness were administered to 150 clerical and 61 service workers. Results indicated occupational differences in patterns of stress, in patterns of strain reactions, as well as in the prediction of specific negative consequences from particular stressors. Clerical workers appeared more sensitive to task insignificance and work environment discomfort while service workers were more affected by lack of autonomy and role overload. For both groups, physical illness was a consequence of life rather than work stress.

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[1]This paper was presented at the 58th Annual Meeting of the Eastern Psychological Association held in Arlington, Virginia, April 1987.

Job and Life Stress and Strain Outcomes Among Service and Clerical Workers

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Although only limited evidence exists, there is good reason to expect occupational differences in job stress (Caplan, Cobb, French, Van Harrison & Pinneau, 1975; Zaleznik, Kets DeVries & Howard, 1977). Simple descriptive epidemiology provides differential mortality rates by occupational group; it is not unreasonable to ask whether differential job stress might not be involved (Kasl, 1978). The National Institute for Occcupational Safety and Health (NIOSH) has ranked 130 jobs in terms of the level of stress they engender. Among the 10 jobs with the highest levels of stress, secretary appears second (after laborer), clinical lab technician fourth, and waitress or waiter eighth. Other jobs considered to be high in stress include dental assistant, telephone operator, and hairdresser (Pelletier, 1984).

Thus, clerical (i.e., secretaries, office-machine operators, clerks, bookkeepers) and service (i.e., food, health, personal, protective, cleaning) workers are in occupations which engender very high levels of stress. However, the greatest growth in number of jobs is expected in the service and clerical occupational areas due to widespread changes in the nature of work. The heavy

physical labor that supported several generations of blue-collar workers is disappearing (Schultz & Schultz, 1986). By the year 2000, close to 90% of the U.S. work force will be in service and information industries (Yankelovich & Immerwahl, 1983).

Despite the extensive investigation of the relationship between work stress and health status, the importance of this source of stress relative to other nonoccupational stressors is not clear. However, it is unlikely that the importance and complexity of job stress and its causal connections will be understood unless both work and nonwork experiences are assessed in research studies. In the present study we examined the relative contribution of a variety of occupational and nonoccupational sources of stress to the psychological and physical health of service and clerical workers.

Method

Subjects

Questionnaires were administered to 150 clerical workers and 61 service workers. For the clerical workers: 27% were male, the average age was 34.3 years, and 48% had a 2-year college degree or higher. For the service workers: 44% were male, the average age was 30.1 years, and 27% had a 2-year college degree of higher.

Questionnaire

The questionnaire elicited information on background characteristics, work experiences, life experiences, and psychological and physical health outcomes.

Respondents completed the Life Experience Survey - LES (Sarason, Johnson & Siegel, 1978) for the occurrence of 64 life events during the past six months. They indicated whether each event was good or bad. The effect of only negative events, excluding the few items relating to experience on the job, was computed as a measure of total life stress.

Job stress was assessed with 7-point Likert scales (Dytell & Pardine, 1983; Dytell, Pardine & Napoli, 1985; Dytell & Schwartzberg, 1986) tapping 13 specific job stress dimensions (role ambiguity, role overload, conflicting demands, disruptions, effort, task repetition, lack of autonomy, nonchallenging work, dependency, task insignificance, lack of resources, work environment discomfort, and job/home interference). All of the above scales were scored such that the higher the score, the greater the magnitude of work stress being reported.

Five separate measures of outcomes were included. First, job satisfaction was measured by totaling responses to three items from Hoppock (1935) and was scored in the direction of greater satisfaction. Two other measures tapped psychological status during the previous three-month period: Langner's (1962) 22-item screening scale for

psycholoigcal disturbance, and Zung's (1965) 8-item index of depressed mood. The fourth outcome measure, the 10-item Rosenberg Self-Esteem Scale (1965) was scored in the direction of higher self-esteem. The last instrument included, the Seriousness of Illness Rating Scale (SIRS; Wyler, Masuda & Holmes, 1968) was scored by summing the severity values for reported illnessnes to yield a total severity score.

Results

Means and standard deviations for all predictor and outcome measures were calculated separately for the two occupational groups and are reported in Table 1 . T-tests

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Insert Table 1 about here

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indicated only one significant difference on magnitude of work stress; service workers reported significantly higher job/home interference than clerical workers (t = 2.345, 209 d.f.). No significant occupational differences were found on the health outcome measures.

Product-moment correlations were computed among all predictor and outcome measures; Table 2 presents the correlation coefficients for both clerical and service workers. The outcomes for the two occuational groups appear

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Insert Table 2 about here

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to be differentially affected by work and nonwork sources of stress. For example, clerical worker's self esteem tended to be more sensitive to occupational sources of stress, while service worker's self esteem was negatively associated with life stress. Also, the outcomes appeared to be differentially affected by specific work stressors. For example, psychological disturbance was associated with role ambiguity, task repetition, lack of autonomy, nonchallenging work, task insignificance, work environment discomfort, and job/home interference for clerical workers, while this same outcome was correlated with role overload and disruptions for service workers.

To further examine the relative contributions of different job stressors as well as life stress in predicting psychological and physical health outcomes, exploratory stepwise regression analyses (Kerlinger & Pedhazur, 1973) were performed. Through this procedure, a predictor was selected for inclusion in the regression equation based on its ability to account for significantly greater amounts of variance in the outcome measure after having partialled out the other variables in the equation. At each point in the selection, the predictor that produces the greatest increment in $\underline{R}^2$ is entered into the equation. Variables are continuously entered as long as the test for significance of the increment in $\underline{R}^2$ meets a pre-specified alpha criterion (in this case, entry alpha = .05). Tests are also performed at each step to determine the loss in $\underline{R}^2$ if a variable

already in the equation is deleted; if the loss does not reach statistical significance (in this case, removal alpha = .01), the variable is deleted. Stepwise analysis is terminated when variables not already in the equation fail to produce a significant increment in $\underline{R}^2$ and when there are no variables already in the equation than can be deleted.

Results of the stepwise analyses performed on the data for clerical workers appear in Table 3, and for service workers in Table 4. Life stress was the first predictor

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Insert Tables 3 & 4 about here

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of physical illness for both occupational groups; it accounted for 6.6% of the variance for clerical workers and 15.6% for service workers. However, aside from this similarity, the remaining findings point to occupational differernces. For service workers, life stress was the best predictor of lowered self esteem and the second predictor of psychological disturbance accounting for 19% and 12% of the variance respectively. However,it was work and not life stressors, specifically lack of autonomy and role overload which were the most important predictors of negative health consequences for service workers. Lack of autonomy accounted for 27% of the variance in lowered job satisfaction, 5% of the variance in lowered self esteem, and over 8% of the variance in physical illness. Role overload accounted for 24% of the variance in psychological disturbance, 17% of the

variance in depression, 7% of the variance in lowered self esteem, and 6% of the variance in lowered job satisfaction.

Clerical workers' patterns of stress-strain were very different from those of service workers. For clerical workers, task insignificance and work environment discomfort were the most important predictors of job satisfaction (46% and 5%), self esteem (5% and 8%), and depression (20% and 5%), while job/home interference and task repetition were the most important predictors of psychological disturbance accounting for 10% and 7% of the variance.

Discussion

The findings from the present study clearly support the large body of evidence concerning the negative impact of stress experienced both on the job (Beehr & Newman, 1978; Cooper & Marshall, 1976; Holt, 1982) and off the job (Barrett, Rose & Klerman, 1979; Holmes & Masuda, 1974; Rahe & Arthur, 1978).

However, the major contribution of the present research is to demonstrate the moderator role played by occupational status in relationships between measures of stress and strain, a role first suggested by Kasl and French (1962) and Kornhauser (1965). The component variables in the stress-strain relationship are unique to specific occupations. For service workers, life stress was strongly associated with lowered self esteem, depression, pyschological disturbance, and physical illness. While life stress was related to psychological disturbance and physical

illness for clerical workers, work stressors were more highly correlated with outcomes for this group.

It is from the stepwise analyses that the clearest findings of the study emerge. Among clerical workers, stressful work experiences, specifically task insignificance and work environment discomfort, were most critcal, accounting for 51% of the variance in job satisfaction, 13% in self esteem, 27% in depression, and 5% in physical illness. On the other hand, the findings were very different for service workers where a combination of life stress and work stress, specifically lack of autonomy and role overload, were most critical accounting for 33% of the variance in job satisfaction, 31% in self esteem, 25% in depression, 36% in psychological disturbance, and 24% in physical illness.

Although the primary finding is one of occupational differences - task insignificance and work environment discomfort being the most important predictor of strain among clerical workers, and lack of autonomy and role overload being the most important predictor among service workers - certain similarities in the stress-strain patterns should not be overlooked. For both occupational groups, life stress was the major predictor of physical illness accounting for 16% of the variance in service workers and 7% in clerical workers.

In addition, a picture of multidetermination emerges; the stepwise regression analyses suggests that multiple

stressors were responsible for each of the strain reactions studied. For service workers, five work stressors and life stress were significant predictors of depression, four different stressors were related to depression and psychological disturbance, and three steps were involved in the prediction of physical illness. This picture of multidetermination is confirmed with service workers with four individual predictors of depression and three of self esteem and physical illness. Thus, a combination of occupational and nonoccupational stressors determine negative health consequences. Our results also indicated that these two areas are independent; there were no significant correlations between life stress and individual work stressors for either group. This is consistent with earlier reports (Dubin, 1956; Seeman, 1967) that work and nonwork experiences are generally unrelated.

A surprising finding does emerge on the lack of relation between magnitude of stress and adverse reactions reported by a particular occupation group. For example, service workers reported suffering from a significantly greater magnitude of job/home interference than clerical workers reported. Yet, in spite of the high levels of this stressor reported, job/home interference did not contribute to any adverse consequences for service workers. In fact, job/home interference did emerge on the first step as a predictor of psychological disturbance, but it did so for clerical and not service workers.

Further research is needed to investigate occupational differences in predicting health status from stressful work and life experiences. Investigators should examine the generalizability of present findings to workers in other occupational groups. Also, since the majority of workers in both of these occupational categories were women, it is is quite possible that gender could moderate relationships between measures of stress and strain (Dytell, et.al., 1985; Dytell & Schwartzberg, 1986; Singer, 1975). Thus, a complex joint effect of occupational and gender moderator variables is likely to exist.

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Table 1

Means and Standard Deviations for Predictors and Outcome Measures for Clerical and Service Workers

Variable	Clerical Workers (N=150) M	Clerical Workers (N=150) SD	Service Workers (N=61) M	Service Workers (N=61) SD
WORK STRESSORS:				
Role Ambiguity	8.580	4.103	8.328	3.520
Role Overload	6.480	3.331	6.934	2.938
Conflicting Demands	3.300	1.938	3.541	1.867
Disruptions	4.687	1.929	4.738	1.940
Effort	11.393	2.449	11.459	2.203
Task Repetition	7.820	3.171	7.820	3.186
Lack of Autonomy	9.380	4.334	8.967	3.430
Work Nonchallenge	6.813	2.995	6.197	3.356
Dependency	3.627	2.015	3.443	1.988
Task Insignificance	11.753	5.543	10.377	4.723
Lack of Resource	5.867	3.239	5.590	2.735
Discomfort	5.480	3.383	5.623	3.153
Job/Home Interference*	2.907	1.829	3.623	1.959
LIFE STRESS	5.987	6.779	6.049	7.091
OUTCOMES:				
Job Satisfaction	14.293	3.379	14.705	2.836
Self Esteem*	42.100	6.032	40.951	6.749
Depression	22.360	7.783	22.918	7.747
Psychological Disturbance	3.193	3.254	3.295	3.437
Physical Illness	837.533	793.765	790.688	794.135

*$p < .05$

Table 2

Significant Correlation Cofficients between Stressors

and Outcome Measures for Clerical and Service Workers

	Clerical Workers (N=150)					Service Workers (N=150)				
	Job. Sat.	Self Esteem	Depression	Psy. Dis.	Phy. Ill.	Job Sat.	Self Esteem	Depression	Psy. Dis.	Phy. Ill.
WORK STRESSORS:										
Role Ambiguity	-.371	-.183	.317	.180			-.225	.277		
Role Overload		-.174	.194			-.250	-.368	.415	.491	.325
Conflicting Demands					.229			.333		
Disruptions									.279	.236
Effort	.262		-.254			.249		-.340		
Task Repetition	-.407	-.201	.341	.278		-.382				
Lack of Autonomy	-.467	-.178	.410	.280		-.522	-.250	.258		-.260
Work Nonchallenge	-.526	-.206	.400	.256		-.309		.215		-.308
Dependency	-.188									
Task Insignificance	-.675	-.288	.441	.172		-.473	-.245	.346		
Lack of Resources	-.316	-.204	.329	.216				.234	.228	.224
Discomfort	-.402	-.289	.393	.178	.210			.285		
Job/Home Interference	-.206		.246	.305	.178					
Life Stress			.180	.282	.257		-.430	.395	.452	.395

*p $<$ .05

Table 3

Stepwise Regression of Outcome Measures on Predictors for Clerical Workers (N=150)

Order of Selected Variables	r	Regress. Coeff. (Full Eq.)	Beta Weight (Full Eq.)	Incremental Variance	F-ratio for Increment
		Outcome Measure: Job Satisfaction			
1. Task Insignificance	-.675	-.279	-.458	.455	123.750*
2. Discomfort	-.402	-.208	-.208	.050	15.004*
3. Role Ambiguity	-.371	-.139	-.169	.031	9.627*
4. Work Nonchallenge	-.526	-.197	-.174	.017	5.674**
		Intercept = 21.2544	R = .744	R^2 = .544	
		Outcome Measure: Self Esteem			
1. Discomfort	-.289	-.405	-.227	.084	13.502*
2. Task Insignificance	-.288	-.245	-.225	.047	7.921*
		Intercept = 47.1980	R = .361	R^2 = .130	
		Outcome Measure: Depression			
1. Task Insignificance	.441	.261	.186	.195	35.788*
2. Discomfort	.393	.560	.244	.079	16.062*
3. Lack of Autonomy	.410	.372	.207	.045	9.670*
4. Lack of Resources	.329	.508	.212	.037	8.248*
5. Life Stress	.180	.196	.171	.026	5.991*
6. Effort	-.254	-.475	-.149	.019	4.599*
		Intercept = 13.9854	R = .633	R^2 = .401	
		Outcome Measure: Psychological Disturbance			
1. Job/Home Interference	.305	.381	.214	.093	15.204*
2. Task Repetition	.278	.285	.278	.069	12.060*
3. Life Stress	.282	.120	.250	.064	12.026*
4. Disruptions	.216	.152	.151	.020	3.912*
		Intercept = -1.7555	R = .496	R^2 = .246	

(continued)

Table 3 (continued)

Stepwise Regression of Outcome Measures on Predictors for Clerical Workers (N=150)

Order of Selected Variables	r	Regress. Coeff. (Full Eq.)	Beta Weight (Full Eq.)	Incremental Variance	F-ratio for Increment
1. Life Stress	.257	28.714	.245	.066	10.483*
2. Discomfort	.210	41.236	.176	.045	7.464*
3. Conflicting Demands	.229	70.525	.172	.028	4.769*
		Intercept = 206.9312	R = .373	R^2 = .139	

Notes: In the table, r refers to the correlation between predictor and outcome measure.
Significance level for entering variables equalled .05, while significance level for removal equalled .10.

*$p < .05$

Table 4

Stepwise Regression of Outcome Measures on Predictors for Service Workers (N=61)

Order of Selected Variables	r	Regress. Coeff. (Full Eq.)	Beta Weight (Full Eq.)	Incremental Variance	F-ratio for Increment
Outcome Measure: Job Satisfaction					
1. Lack of Autonomy	-.522	-.428	-.518	.272	22.074*
2. Role Overload	-.250	-.232	-.240	.058	4.995*
Intercept = 20.1477		R = .574		R^2 = .330	
Outcome Measure: Self Esteem					
1. Life Stress	-.430	-.332	-.348	.185	13.415*
2. Role Overload	-.368	-.642	-.280	.074	5.799*
3. Lack of Autonomy	-.250	-.435	-.221	.049	4.004*
Intercept = 51.3090		R = .555		R^2 = .308	
Outcome Measure: Depression					
1. Role Overload	.415	.839	.318	.172	12.278*
2. Effort	-.340	-1.380	-.392	.144	12.219*
3. Conflicting Demands	.333	1.380	.332	.096	9.323*
4. Life Stress	.395	.316	.289	.077	8.507*
Intercept = 26.1235		R = .700		R^2 = .490	
Outcome Measure: Psychological Disturbance					
1. Role Overload	.491	.474	.405	.241	18.703*
2. Life Stress	.452	.172	.355	.119	10.736*
Intercept = -1.0034		R = .599		R^2 = .359	
Outcome Measure: Physical Illness					
1. Life Stress	.395	47.192	.421	.156	10.890*
2. Lack of Autonomy	-.260	-67.167	-.290	.082	6.260*
3. Lack of Resources	.224	69.348	.239	.057	4.607*
Intercept = 719.8506		R = .543		R^2 = .295	

Notes: In the table r refers to the correlation between predictor and outcome measure.

Significane level for entering variables equalled .05, while significance level for removal equalled .10.

*$p < .05$